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A GRAVEL ROAD AT DEER LAKE, WISCONSIN

PUBLIC ROADS

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The reports of research published in this magazine are necessarily qualified by the conditions of the tests from which the data are obtained. Whenever it is deemed possible to do so, generalizations are drawn from the results of the tests; and, unless this is done, the conclusions formulated must be considered as specifically pertinent only to the described conditions

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THE WISCONSIN FINANCIAL SURVEY

Digest of a Survey of the Finances of Wisconsin in 1930, with Special Reference to Highways, Conducted by the Bureau of Public Roads and the University of Wisconsin

THE BUREAU of Public Roads in cooperation with the University of Wisconsin has recently been conducting a series of studies in a number of States involving the expenditures for highway purposes and the incidence of taxes for these and other purposes. During the late months of 1930 and all of 1931 such an investigation was made in Wisconsin.¹

This summary of the voluminous report which resulted has been prepared by the Division of Highway Transport of the Bureau in order that the results may be made available insofar as they apply to the general problem of highway taxes, the distribution of expenditures, and the relation of both to the use of highways. Other tax relationships are incidentally revealed.

The calendar year 1930 was chosen for study because it was a census year and the latest year for which data were available. In some cases, the system of public records required that the fiscal year ending in 1930 be used. The variations in comparisons due to using other than the calendar year for these items are known to be negligible, and probably less than they would have been had arbitrary adjustments to the calendar year basis been made.

To classify the incidence of taxation, the State was divided into groups of governmental units and into classes of residence. To distribute expenditure, the highway classifications in use in the State were adopted.

With respect to classes of residence, the State was divided into towns (comprising all rural areas) and incorporated places, the latter being classified as follows:

- Places having a population up to 2,500.
- Places having a population of 2,500 to 15,000.
- Places having a population of 15,000 to 75,000.
- Places having a population of 75,000 to 300,000.²
- Places having a population of 300,000 upward.³

Certain of the smaller incorporated places are known as villages, but all are included in the classification given above. In the portion of the report dealing with motor vehicles and motor-vehicle travel the village classification was used.

THE TAXING SYSTEM DESCRIBED

All taxation in the State is under the general supervision of the State tax commission, a paid commission consisting of three members appointed by the Governor. The State income tax and the inheritance tax are administered entirely by the commission. The valuation tax on railroads, car companies, etc., and on all public service corporations operating in more than one governmental district, is also determined by the commission. Most of these taxes are retained by the State.

The valuations used throughout the study are the valuations of the State tax commission and all tax rates are applied to these valuations. It is conceded

that the valuations are not quite 100 percent of true 1930 property values, but they are probably closer to it than in most States, on the average, and are well proportioned as between the several counties.

The State property taxes are allotted to the counties on the State tax commission's basis of valuations. The State and county taxes are allocated to the various local governmental units on the valuations as equalized by the county boards. The local units finally collect the State, county, and local property taxes on the basis of the local valuation. In order to put the facts relating to taxation on a parity for the purposes of this study, all property taxes have been computed on the basis of the State valuation.

Throughout the investigation, effort was made to eliminate duplicate and agency transactions from the receipts and expenditures of each class of units of government. For bookkeeping and accounting purposes, each treasurer must enter all moneys received as a receipt, and all moneys paid out as an expenditure. In many cases, involving very large amounts, receipts pass through the hands of several treasurers before they are finally paid out to meet an actual public expenditure and to that extent increase unduly the book receipts and expenditures of public funds.

The entire study was governed by the following rules:

1. To consider as taxes of each class of units of government only those taxes levied by act of its proper officials.
2. To consider as receipts only those funds finally credited as having been expended (not transferred) by officials of that unit of government.
3. To consider as expenditures only those funds disbursed (not transferred) under the direction of the officials of that unit of government in or for that unit of government.

Four governmental purposes only were recognized in the study, and all items were allocated under one or the other of these. These purposes were as follows:

1. *Highways*.—All items having to do with the construction, maintenance, marking and signing, and administration of all public highways.
2. *Education*.—All items having to do with the construction, maintenance, teaching, and administration of all public schools, and also of libraries.
3. *Public protection and benefit*.—All items having to do with the protection of lives and property and the pleasure of the people, including police and fire protection, courts and their officials, parks and playgrounds, and charitable and penal activities.
4. *Government*.—All items having to do with the general administration of those public affairs of a unit of government which are not capable of allocation to one of the three public purposes mentioned above.

POPULATION AND ASSESSED VALUATION

In 1930 Wisconsin had 71 counties, subdivided into 1,280 towns (rural units of government), 359 incorporated villages, and 144 incorporated cities. Milwaukee

¹ The investigation was under the immediate direction of Henry R. Trumbower, professor of economics at the University of Wisconsin; tabulations and analyses of highway and financial data were prepared by the late A. R. Hirst, engineer, and H. R. Briggs, statistician.

² No incorporated places of this classification appear in Wisconsin.

³ The city of Milwaukee is alone in this class in Wisconsin.

city and County was the only metropolitan area, although there were 18 other cities having a population of over 15,000. Of the population of 2,939,006 in 1930, 37.1 percent lived in the towns (rural areas); 10 percent in incorporated places having a population of 2,500 or less; 12.4 percent in places having a population of 2,500 to 15,000; 20.8 percent in places having a population of 15,000 to 75,000; and 19.7 percent in Milwaukee city, which had a population of 578,249. In short, 37.1 percent of the population was rural and 62.9 percent was urban.

The assessed valuation of all taxable property in Wisconsin in 1930 was approximately \$5,896,513,000. Thirty-seven percent of the assessed valuation was in the towns; 7.3 percent in incorporated places having a population of 2,500 or less; 10.1 percent in places having a population of 2,500 to 15,000; 21.9 percent in places having a population of 15,000 to 75,000; and 23.7 percent was in Milwaukee city. Thus, 37 percent of the valuation was in the rural areas, and 63 percent in the urban areas. Of the total valuation, 61.1 percent was in the 13 highest valued counties, which comprise only 13.2 percent of the total area of the State.

LARGE AREAS OF LAND YIELD NO TAXES

An effort was made to ascertain the area of lands upon which taxes were not paid in 1930, but without results definite enough to publish. However, the consensus of opinion of those best informed is that taxes were not paid in 1930 on 4,000,000 to 5,000,000 acres of land previously privately held. This would mean probably 7,000 square miles, or about one eighth of the whole area of Wisconsin. This acreage lies almost entirely in the northern part of the State and in the central sandy area. In addition, the Federal Government and the State now own about 500,000 acres, or 800 square miles, in parks, forest areas, and Indian reservations lying almost entirely in the same areas.

HIGHWAY SYSTEMS IN 1930

In 1930 there were three highway systems in the State: (1) The State trunk highway system consisting of 10,218 miles, which was again divided into 2,345 miles of primary Federal-aid highways, 3,246 miles of secondary Federal-aid highways, and 4,627 miles of other State trunk highways; (2) the county trunk highway system consisting of 13,827 miles; and (3) the remaining roads and streets, for the most part strictly local roads, amounting to 65,494 miles. Of this mileage, 58,934 miles were local town roads, 1,567 miles were village streets, and 4,993 miles were city streets. A summary and percentage relationship is given in table 1.

TABLE 1.—Classification of highways, roads, and streets in 1930

Type	Miles	Percentage of total
State highway system.....	10,218	11.4
County trunk highway system.....	13,827	15.4
Town roads.....	58,934	65.8
Village streets.....	1,567	1.8
City streets.....	4,993	5.6
Total.....	89,539	100.0

There were 39,643 miles of surfaced rural highways in Wisconsin on December 30, 1930. This was 47.8 percent of all rural highways. Of this mileage, 3,576

miles (9 percent) were concrete or its equivalent; 781 miles (2 percent) were bituminous macadam; 35,286 miles (89 percent) were crushed stone, gravel, and other minor surfacings. Following are the mileages surfaced and percentage of all mileage surfaced on the several rural highway systems:

	Miles surfaced	Percentage surfaced
Federal-aid highways (primary).....	2,341	99.8
Federal-aid highways (secondary).....	3,090	95.2
Other State trunk highways.....	3,932	85.0
Whole State trunk highway system.....	9,363	91.6
County trunk highways.....	9,283	67.1
Local town roads.....	20,997	35.6

Out of the 4,357 miles of high-type surfaces, 3,714 miles (85.2 percent) were on the State trunk highway system; 630 miles (14.5 percent) were on the county trunk highway system; and 13 miles (0.3 percent) were on local roads.

One county (Milwaukee) had every mile of road in the county surfaced, with 30 percent surfaced with concrete or its equivalent. The least populous group of counties had only 26 percent of its mileage surfaced. The most populous group after Milwaukee County had 80 percent of its mileage surfaced, of which about one sixth was of high type.

PERSONAL REPORTS USED TO OBTAIN DATA ON MILEAGE TRAVELED AND INCIDENCE OF MOTOR-VEHICLE TAXATION

As it was the general purpose of the study to determine the amount of the various taxes and imposts, who paid them, where the money was expended and for what purpose, and to disclose the relationships between the various taxes and expenditures, it was necessary to ascertain the distribution of automotive revenues and gasoline taxes paid. For this purpose, personal reports were gathered from 5,116 vehicle owners to determine the mileage traveled on the different classifications of highways. A distribution of revenue was then made on this basis.

Only those owners were questioned whose motor vehicles operated through the whole of 1930. The investigators were instructed to interview owners who would readily respond, selected from all parts of the unit of government being surveyed and from all walks of life. They were instructed to get in the rural districts a proper proportion of motor vehicles as between farmers living on each of the three road systems. Especial and painstaking efforts were to be made to determine accurately, as far as possible, the total mileage traveled by each motor vehicle and its gasoline consumption in Wisconsin in 1930. These were to be carefully estimated or established from all the known facts.

RECEIPTS FROM TAXATION ANALYZED

The total receipts from all taxes and imposts in 1930 were \$211,679,900, of which \$126,998,400 were derived from the general property tax, \$12,976,300 from motor vehicle and drivers' license fees, \$7,947,200 from the gasoline tax, and \$63,758,000 from other miscellaneous sources.

THE GENERAL PROPERTY TAX

The total general property tax levied and collected in the tax year 1930 was distributed as shown in table 2.

As all persons in Wisconsin live either in towns (townships) or in incorporated places, the above-mentioned table may be restated by allocating the direct levies by

TABLE 2.—General property taxes imposed by the various governing units

Imposed by—	Amount	Percent- age of total
State.....	\$4,296,800	3.38
Counties.....	33,294,800	26.22
Towns.....	20,663,700	16.27
Places up to 2,500.....	7,415,100	5.84
Places 2,500 to 15,000.....	10,941,300	8.62
Places 15,000 to 75,000.....	21,807,300	17.17
Milwaukee.....	28,579,400	22.50
Total.....	126,998,400	100.00

TABLE 3.—Incidence of total general property tax

Paid by taxpayers in—	Amount paid	Percent- age of total	Tax rate per \$100
Towns.....	\$38,148,800	30.04	\$1.67
Places up to 2,500.....	10,789,700	8.50	2.50
Places 2,500 to 15,000.....	15,123,800	11.91	2.57
Places 15,000 to 75,000.....	28,980,000	22.82	2.24
Milwaukee.....	33,956,100	26.73	2.46
Total.....	126,998,400	100.00	2.13

counties and the State to the municipalities in which the taxes were paid, thus showing the incidence of property taxes on taxpayers in rural areas (towns) and in incorporated places, together with the tax rates. The resulting distribution is shown in table 3.

The actual average total tax rates to produce the funds actually raised by levies upon property are also shown. If all State, county, and local taxation and imposts had been levied as a direct tax upon the true valuation of all taxable property, the approximate average tax rates would have been as follows:

	Per \$100 of valua- tion
Towns.....	\$2.72
Places up to 2,500.....	4.12
Places 2,500 to 15,000.....	4.23
Places 15,000 to 75,000.....	3.91
Milwaukee.....	4.08
Average for the State.....	3.54

Property taxes were, therefore, the following percentages of all taxes and imposts paid by residents of these groups of local governmental units:

	Percent
Towns.....	61.4
Places up to 2,500.....	60.7
Places 2,500 to 15,000.....	60.8
Places 15,000 to 75,000.....	57.3
Milwaukee.....	60.3
Average for the State.....	60.2

MOTOR-VEHICLE REGISTRATION AND IMPOSTS

The motor-vehicle license fees and the gasoline tax together provide all funds needed to pay the cost of all State participation in highway work, including State aid and the mileage allowances to all other units of government. The State-retained share of the proceeds of these imposts, together with the Federal aid, is spent in great part upon the State trunk highway system.

There were 794,404 (net) motor vehicles of all types registered in 1930. This was one for every 3.7 persons. There was one automobile for every 4.3 persons, and one motor truck for every 26.7 persons. There were only 601,555 motors vehicles assessed as of May 1, 1930.

Probably only about 80 percent of the vehicles registered were located by the assessors. The average assessed value of all motor vehicles was \$261. The assessment varied from an average of \$189 in the towns to \$360 in Milwaukee. The property tax on motor vehicles was abandoned in 1931, when the 4-cent gasoline tax became effective. The per capita ownership of motor vehicles was highest in the towns where it was one to every 3.3 persons. In Milwaukee it was one to every 4.2 persons.

The total motor-vehicle license fees paid in 1930 were \$12,976,308. The total cost of licensing (including title certificates and drivers' licenses) was \$851,244, which averaged \$1.07 per motor vehicle registered. About \$26,000, collected as drivers' licenses, etc., is included in the above. The cost of collection was 6.56 percent of all the fees collected. The average fee paid for passenger automobiles was \$13.08; for motor trucks, \$26.50; for city busses, \$275; for intercity busses, \$386; for publicly owned vehicles, \$1. The average fee paid for motor vehicles privately owned and registered was about \$16.50. The average for all vehicles, including those publicly owned, was \$16.33. In general, the average fee paid increased as the place of residence became more urban. Residents of the towns paid the lowest average fee on all classes of vehicle.

The total (net after refunds) gasoline tax paid (at the 1930 rate of 2 cents per gallon) was \$7,947,193. The cost of collecting this tax and making the refunds was \$16,301, or about 0.2 percent of the net receipts. The average gasoline tax paid in 1930 for each motor vehicle licensed was \$10, indicating an average taxed consumption of 500 gallons per motor vehicle.

The average motor vehicle license fee plus the average gasoline tax paid was \$26.33 per motor vehicle.

Of the total amount paid for the registration of motor-vehicles, 36.28 percent was paid by residents of the towns; 41.69 percent by residents of villages and of cities other than Milwaukee; and 22.03 percent by residents of Milwaukee.

While the percentage of the gasoline tax paid by motor-vehicle owners in each class of governmental unit is less precisely known than the percentage of the license fees paid, it can be stated with considerable confidence that, of the total gasoline tax paid by Wisconsin owners, approximately 30 percent is paid by residents of the towns; 48 percent by residents of villages and of cities other than Milwaukee; and 22 percent by residents of Milwaukee.

INCIDENCE OF MOTOR-VEHICLE AND GASOLINE TAXES

Table 4 shows the probable distribution of the amounts paid for motor-vehicle registration fees and for motor-fuel taxes by motor-vehicle owners residing in the several classes of units of government. This tabulation is based on a study of the actual place of ownership and the fees paid by over 20,000 of the motor vehicles registered in Wisconsin in 1930. Unfortunately, the State did not in 1930 require as a prerequisite to registration that the applicant for a license name the local unit of government in which he lived. This study, however, carefully located the local place of residence of the above number and ascertained the fee each paid, and it is felt that the percentages of motor vehicles owned in the various local units of government and of the fees paid are very close to the probable facts in Wisconsin.

TABLE 4.—Distribution of amounts paid for motor vehicle registration fees and for motor fuel taxes by units of government

Item	Unit of government					
	State total	Towns	Places up to 2,500	Places 2,500 to 15,000	Places 15,000 to 75,000	Milwaukee
Motor vehicles:						
Percentage of total owned.....	100.00	41.84	10.51	10.31	20.10	17.24
Number.....	794,404	332,379	83,492	81,903	159,675	136,955
License fees:						
Percentage of total paid.....	100.00	36.28	9.60	10.93	21.16	22.03
Amount.....	\$12,976,300	\$4,707,800	\$1,245,700	\$1,418,300	\$2,745,800	\$2,858,700
Average per vehicle.....	\$16.33	\$14.16	\$14.92	\$17.32	\$17.20	\$20.87
Gasoline consumption:						
Average gallons per vehicle.....	1 563	1 409	1 618	1 675	1 690	1 734
Total gallons (in millions).....	397.36	119.07	45.22	48.45	96.54	88.08
Gasoline tax:						
Percentage of total paid.....	100.00	29.96	11.38	12.19	24.30	22.17
Amount.....	\$7,947,200	\$2,381,400	\$904,300	\$968,900	\$1,930,800	\$1,761,700
Average per vehicle.....	\$10.00	\$7.16	\$10.83	\$11.83	\$12.10	\$12.86
Payments:						
Total fees and gasoline tax.....	\$20,923,500	\$7,089,200	\$2,150,100	\$2,387,200	\$4,676,600	\$4,620,400
Percentage of total paid.....	100.00	33.88	10.27	11.41	22.35	22.09
Average per vehicle.....	\$26.33	\$21.32	\$25.75	\$29.15	\$29.30	\$33.73

¹ This is the average gasoline consumption for motor vehicles in operation the whole of 1930 as determined by the survey. All other figures below these are modified to accord with the actual motor-fuel tax paid.

As to gasoline consumption and gasoline tax paid, these were derived from the survey of traffic. The actual sums paid were computed upon the basis of the actual gasoline tax paid, and not upon the gasoline consumption indicated as a result of the traffic survey. In other words, there was the fixed fact that so many dollars in gasoline tax were paid (less refunds) and subtracting the estimated amount for tourist payments, the remainder was divided in proportion to the relative consumption indicated by the traffic survey.

The data given in table 4 are summarized in table 5, which indicates quite conclusively that both motor-

TABLE 5.—Distribution of amounts paid for motor vehicle registration fees and for motor fuel taxes by units of government

Paid by motor vehicle owners in—	Motor vehicle fees	Gasoline tax	Total	Percent	Per vehicle
Towns.....	\$4,707,800	\$2,381,400	\$7,089,200	33.88	\$21.32
Places up to 2,500.....	1,245,700	904,300	2,150,100	10.27	25.75
Places 2,500 to 15,000.....	1,418,300	968,900	2,387,200	11.41	29.15
Places 15,000 to 75,000.....	2,745,800	1,930,800	4,676,600	22.35	29.30
Milwaukee.....	2,858,700	1,761,700	4,620,400	22.09	33.73
Total for State.....	12,976,300	7,947,200	20,923,500	100.00	26.33

vehicle license fees and gasoline taxes fall in much heavier ratio on the urban communities than on the rural communities. This indicates that the type of motor vehicle owned in the rural communities probably averages lighter in weight than in the urban communities, besides the fact that the average mileage traveled is less than in the urban communities.

It has been customary to estimate the amount of motor-vehicle license fees paid and gasoline tax paid on the sole basis of the number of motor vehicles registered, but apparently the use of this method leads to glaring inaccuracies as to tax payments.

For example, it will be noted that while the average payment per motor vehicle in the towns in Wisconsin

in 1930 was \$21.32, the average payment by motor vehicles owned in Milwaukee was \$33.73. The payments per motor vehicle averaged \$12.41 (58 percent) higher in Milwaukee than in the towns. The average payments of gasoline tax were about 80 percent larger in Milwaukee than in the towns.

TAXATION DATA SUMMARIZED

In table 6 the amounts paid by taxpayers in the several classes of governmental unit are summarized. It

TABLE 6.—Incidence and classification of all taxes paid in 1930

Paid by taxpayers in—	General property tax		Registration fees, drivers' licenses, and gasoline tax		Miscellaneous taxes, fees, and imposts		All taxes	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Towns.....	\$38,148,800	30.1	\$7,089,200	33.9	\$16,888,400	26.5	\$62,126,400	29.3
Places up to 2,500.....	10,789,700	8.5	2,150,100	10.3	4,809,800	7.6	17,749,600	8.4
Places 2,500 to 15,000.....	15,123,800	11.9	2,387,200	11.4	7,385,100	11.6	24,896,100	11.8
Places 15,000 to 75,000.....	28,980,000	22.8	4,676,600	22.3	16,861,400	26.4	50,518,000	23.9
Milwaukee.....	33,956,100	26.7	4,620,400	22.1	17,813,300	27.9	56,389,800	26.6
		100.0		100.0		100.0		100.0
Total for State.....	126,998,400	60.0	20,923,500	9.9	63,758,000	30.1	211,679,900	100.0

is shown in this table that of all taxation for all purposes in all units of government, 29.3 percent was paid by taxpayers in the towns; 8.4 percent by taxpayers in places having a population of 2,500 or less; 11.8 percent by taxpayers in places having a population of 2,500 to 15,000; 23.9 percent by taxpayers in places having a population of 15,000 to 75,000; and 26.6 percent by taxpayers in Milwaukee. It is thus evident that, of all taxation, 29.3 percent fell upon taxpayers in rural areas, and 70.7 percent upon taxpayers in urban communities.

Of the total revenue obtained by taxation for all purposes, \$211,679,900, it is found that 60.0 percent was contributed by the general property tax, 9.9 percent by the general taxation on motor vehicles and motor fuel, and 30.1 percent by miscellaneous taxes, fees, and imposts.

The funds described in table 6 as "Miscellaneous taxes, fees, and imposts" are subdivided as follows:

	Amount	Percentage of total State taxes
State-imposed taxes, fees, and imposts:		
Ad valorem tax on public utilities:		
Statewide.....	\$6,908,700	.8
Local.....	7,392,500	
Special imposts on motor vehicles:		
Bus and truck permits.....	47,100	.2
Ton-mile tax.....	91,000	
Gasoline inspection.....	236,200	
Income tax.....	21,454,400	10.1
Inheritance tax.....	2,645,700	
Taxes on insurance companies:		
Life.....	1,555,600	13.0
Other.....	845,300	
Miscellaneous taxes:		
General.....	504,300	.2
Local.....	913,100	
Miscellaneous fees, licenses, and permits.....	2,124,200	
Miscellaneous collections by local units.....	19,039,900	
Total.....	63,758,000	30.1

If the percentages given in this tabulation are combined with those of table 6, it will be found that of all taxation in all units of government (including all fees, licenses, and imposts) 66.8 percent was obtained by taxation on real and personal property (including the personal property tax on motor vehicles, \$3,300,000) and all State ad valorem taxes; 10.1 percent by licenses, fees, and taxes on motor vehicles and their use; 10.1 percent by taxation on incomes; and 13 percent by miscellaneous fees, licenses, permits, and imposts.

Of all taxation and imposts, 33 percent was imposed by act of State officials; 20.7 percent by county officials; 9.9 percent by the people or officials of towns; 3.8 percent by the people or officials of places having a population of less than 2,500; 5.7 percent by officials of places having a population of 2,500 to 15,000; 11.8 percent by officials of places having a population of 15,000 to 75,000; and 15.1 percent by officials of Milwaukee.

HIGHWAY REVENUES OBTAINED FROM GENERAL PROPERTY AND MOTOR-VEHICLE TAXES

Of the total of \$126,998,400 obtained from the general taxation of property in 1930, the sum of \$31,888,200 was imposed specifically for highway purposes. In this sum are included special assessments on property to the amount of \$4,700,700. The income from the taxation of motor vehicles, including the vehicle and drivers' license fees, gasoline tax, and special fees and permits, is devoted entirely to highway purposes. The total revenue from

WISCONSIN TAXES IN 1930

The total receipts from all taxes and imposts in Wisconsin in 1930 were \$211,679,900. Receipts from the taxation of general property were \$126,998,400; from motor-vehicle fees and gasoline tax, \$20,923,500; from special imposts on motor vehicles, \$374,300; from other sources, including income and inheritance taxes, valuation tax on railroads and other public utilities, and miscellaneous fees and imposts, \$63,383,700.

Of the total revenues from all taxes and imposts, taxpayers in the towns contributed \$62,126,400 or 29.3 percent; those in incorporated places having a population of 2,500 or less, \$17,749,600, or 8.4 percent; in places of 2,500 to 15,000 population, \$24,896,100, or 11.8 percent; in places of 15,000 to 75,000 population, \$50,518,000, or 23.9 percent; in Milwaukee, \$56,389,800, or 26.6 percent.

The average actual tax rates on general property, per \$100 valuation, were as follows: Towns, \$1.67; places of 2,500 population or less, \$2.50; places 2,500 to 15,000, \$2.57; places 15,000 to 75,000, \$2.24; Milwaukee, \$2.46.

Motor-vehicle owners in the towns paid in license fees and gasoline tax an average of \$21.32; in places of 2,500 population or less, the average was \$25.75; in places 2,500 to 15,000, \$29.15; in places 15,000 to 75,000, \$29.30; in Milwaukee, \$33.73.

TABLE 8.—All taxes specifically imposed for highway purposes in 1930 classified according to places of collection

Paid by taxpayers in—	Amount	Percent
Towns.....	\$23,035,200	43.3
Places up to 2,500.....	4,806,800	9.0
Places 2,500 to 15,000.....	5,660,700	10.7
Places 15,000 to 75,000.....	10,650,900	20.0
Milwaukee.....	9,032,400	17.0
Total.....	53,186,000	100.0

these sources, \$21,297,800, provided, as stated previously, all funds for State participation in highway work, including State aid and the mileage allowances to all other units of government.

In considering highway taxation and expenditures, it was necessary to fix and select certain definite charges uniformly in all governmental units in order to make a true comparison, and throughout the report highway items include all charges for construction, maintenance, marking and signing, and the administrative costs of the various bodies in authority properly allottable to roads. On this basis, the total highway taxes were as shown in table 7.

These taxes were levied on the various units in the amounts shown in table 8.

BONDED INDEBTEDNESS

The State has a constitutional prohibition against bonding and has no bonded indebtedness for any purpose except \$1,363,700 of Civil War bonds still unpaid.

All other units of government may bond.

The total of all publicly issued bonds outstanding on December 31, 1930, as nearly as could be determined at the time, was \$154,378,400. The total debt service on these bonds in 1930 was \$43,041,300. Table 9 gives the distribution of this indebtedness according to the governmental purposes for which the bonds were issued. The table also lists the indebtedness of each class of government unit.

The total bonds outstanding on December 31, 1930, were 2.6 percent of the total assessed valuation of the State and the per capita indebtedness was \$52.53. The per capita cost of all debt service in 1930 was \$14.64.

The bonds outstanding issued for highway purposes amounted, at the close of 1930, to \$59,879,200. The county highway bonds outstanding totaled \$43,017,500. The remaining \$16,861,700 of highway bonds were issued by cities and villages for street construction and

TABLE 7.—All taxation specifically imposed for highway purposes in 1930

TAXES IMPOSED ON GENERAL PROPERTY

	Amount	Percent
County.....	\$14,557,800	27.4
Local.....	12,629,700	23.8
Special assessments.....	4,700,700	8.8
Total.....	31,888,200	60.0

IMPOSTS UPON MOTOR VEHICLES AND THEIR OWNERS AND OPERATORS

Vehicle and drivers' license fees.....	\$12,976,300	24.4
Bus and truck permits.....	47,100	.1
Ton-mile tax.....	91,000	.2
Motor fuel tax.....	7,947,200	14.9
Gasoline inspection.....	236,200	.4
Total.....	21,297,800	40.0
Grand total.....	53,186,000	100.0

TABLE 9.—*Bonded indebtedness as of Dec. 31, 1930, classified by purpose of issue and by unit of government*

BY PURPOSE			
	Amount	Percentage of total	Debt service in 1930 (principal and interest)
Highways.....	\$59,879,200	38.8	\$12,486,500
Education.....	29,208,600	18.9	12,300,100
Public benefit.....	47,961,100	31.1	10,582,500
Government.....	17,329,500	11.2	7,672,200
Total.....	154,378,400	100.0	43,041,300

BY UNIT OF GOVERNMENT			
	Amount	Percentage of total	
Towns.....	\$1,735,300	1.1	
Places up to 2,500.....	6,984,000	4.5	
Places 2,500 to 15,000.....	12,421,000	8.1	
Places 15,000 to 75,000.....	37,090,800	24.0	
Milwaukee.....	45,030,800	29.2	
Counties.....	49,752,800	32.2	
State.....	1,363,700	.9	
Total.....	154,378,400	100.0	

improvement, and, in a few instances, by towns. The distribution, as nearly as could be determined, was as follows:

Villages and towns.....	\$1,161,400
Cities other than Milwaukee.....	9,568,800
Milwaukee.....	6,131,500

The debt service in 1930 for all outstanding bonds was \$43,041,300 of which \$12,486,500 was for highway bonds. The debt service for the county highway bonds was \$5,027,500, the principal payments being \$3,028,100 and the interest \$1,999,400. There is no information on the division between principal payments and interest for the debt service on other than county highway bonds. However, the debt service on the remaining \$16,861,700 of highway bonds was \$7,459,000; and we may obtain an approximate figure by assuming that the average rate of interest was the same as that of the county bonds (4.65 percent). On this basis we obtain a figure of \$784,100 for interest and \$6,674,900 for principal payments. We may therefore conclude that the debt service on all street and highway bonds in 1930 consisted approximately of \$9,703,000 in principal payments and \$2,783,500 in interest. If we apply the same rate to the total State indebtedness we obtain the following approximate figures for total debt service: Principal payments, \$35,862,700; interest, \$7,178,600.

During 1930 \$3,028,100 of highway bonds were retired and \$4,816,500 in new bonds were issued by the various counties; so that the indebtedness of the coun-

ties in highway bonds was increased by \$1,788,400 during that year. The extent to which other indebtedness was increased is not recorded in the report.

EXPENDITURES ANALYZED

The total expenditures by all units of government, for all purposes except the payment of principal on bonds, were \$202,377,000. Interest payments of approximately \$7,200,000 are included in this total. Addition of the principal payments of approximately \$35,860,000 would bring the total expenditures to \$238,237,000. The principal payments are not to be regarded as true expenditures, since they represent the repayment of funds which were recorded as expenditures in previous years.

Table 10 gives the expenditures by the State, the counties, and the various classes of municipal units, for each of the several purposes of government. Of all expenditures, 30.3 percent were made for highways, 32.6 percent for education, 30.9 percent for public benefit, and 6.2 percent for other governmental purposes.

The distribution of total expenditures according to the classes of governmental unit in which they were made was as follows:

Expended in—	Amount	Percent
Towns.....	\$79,199,900	39.1
Places up to 2,500.....	14,985,700	7.4
Places 2,500 to 15,000.....	20,783,700	10.3
Places 15,000 to 75,000.....	43,141,300	21.3
Milwaukee.....	44,266,400	21.9
Total.....	202,377,000	100.0

It is apparent from this tabulation that 39.1 percent of the expenditures were made in the rural areas, and 60.9 percent in the urban areas. Table 11 gives the per capita expenditures made for the several purposes of government in the several classes of local unit of government.

TABLES SHOW RELATIONS BETWEEN VALUATION, TAXATION, AND EXPENDITURES

The valuation, taxation, and expenditure per capita in 1930 were as shown in table 12. The ratio of per capita expenditures to per capita taxation is also given. This ratio is significant as an index of the flow of State (including Federal) and county aids to the less populous areas. For instance, about 21.5 percent of the taxes paid by citizens of Milwaukee were not expended in Milwaukee, while about 27.5 percent of the expenditure in the towns was not provided by taxes paid by inhabitants of these rural areas.

TABLE 10.—*Distribution of total expenditures in 1930, showing the amounts expended by the State, the counties, and the several classes of governmental unit, on highways, education, public benefit, and other governmental purposes*

Unit of government making expenditure	Highways		Education		Public benefit		Government		All purposes		
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Percentage of total
Towns.....	\$10,387,300	34.7	\$16,809,000	56.2	\$945,300	3.2	\$1,776,800	5.9	\$29,918,400	100.0	14.8
Places up to 2,500.....	1,824,000	19.5	4,615,200	49.4	1,980,200	21.2	931,200	9.9	9,350,600	100.0	4.6
Places 2,500 to 15,000.....	2,089,700	13.7	6,969,300	45.9	4,969,300	32.7	1,172,000	7.7	15,200,400	100.0	7.5
Places 15,000 to 75,000.....	4,680,000	13.8	16,381,900	48.2	11,074,200	32.6	1,823,100	5.4	33,959,300	100.0	16.8
Milwaukee.....	4,311,900	12.3	12,401,600	35.5	17,017,700	48.6	1,269,900	3.6	35,001,000	100.0	17.3
Counties.....	20,310,800	47.2	1,209,000	2.8	17,625,700	41.0	3,915,200	9.0	43,060,600	100.0	21.3
State.....	17,676,700	49.3	7,541,600	21.0	9,045,600	25.2	1,622,800	4.5	35,886,700	100.0	17.7
Total.....	61,280,400	30.3	65,927,500	32.6	62,658,100	30.9	12,511,000	6.2	202,377,000	100.0	100.0

TABLE 11.—Per capita expenditures by purpose and by classes of local unit in which they were made, based on a population of 2,939,006

Unit of government	Highways	Education	Public benefit	Government	Total
Towns.....	\$41.70	\$18.03	\$9.47	\$3.43	\$72.63
Places up to 2,500.....	12.02	18.61	15.16	5.01	50.80
Places 2,500 to 15,000.....	7.71	21.14	22.99	5.19	57.02
Places 15,000 to 75,000.....	8.45	29.79	27.42	4.92	70.58
Milwaukee.....	7.46	25.21	39.51	4.37	76.55
State.....	20.85	22.43	21.32	4.25	68.85

TABLE 12.—Valuation, taxation and expenditures per capita in 1930, based on a population of 2,939,006

Item	State	Towns	Places up to 2,500	Places 2,500 to 15,000	Places 15,000 to 75,000	Milwaukee
Valuation.....	\$2,006.00	\$2,001.00	\$1,465.00	\$1,625.00	\$2,115.00	\$2,417.00
Taxation.....	72.02	56.99	60.17	68.32	82.65	97.52
Expenditures.....	68.85	72.63	50.80	57.02	70.58	76.55
Ratio of per capita expenditure to per capita taxation.....	0.956	1.275	0.844	0.835	0.854	0.785

Table 13 gives the percentage distribution of population, motor-vehicle ownership, property valuation, taxes paid, and expenditures made in the several groups of local governmental unit. While the trends in all these items are similar, there are significant differences. Thus the towns, with 37.1 percent of the population, paid only 29.3 percent of the taxes, while Milwaukee, with less than 20 percent of the population, paid nearly 27 percent of the taxes. Three factors, a higher per capita valuation, more intensive use of motor vehicles, and higher public benefit costs due to the density of population serve to account for these differences.

It is noticeable that expenditures in the various classes of local unit are rather closely proportional to their valuations. The greatest differences are in the towns where the percentage of expenditure exceeds that of valuation by about 2 percent, and in Milwaukee, where the reverse is true.

The figures for motor-vehicle ownership show that the number of persons owning cars, per 100 of population, is greater in the rural areas than in the cities, particularly Milwaukee.

HIGHWAY EXPENDITURES DISCUSSED IN DETAIL

The total expenditures for highways and streets in Wisconsin in 1930 were \$61,280,400. This amount is lower than figures sometimes quoted because special efforts have been made to eliminate all agency transactions and duplicate expenditures. The total shown does not include principal payments on highway bonds (approximately \$9,700,000), because in previous years these have already been shown as highway expendi-

TABLE 13.—Distribution of population, motor-vehicle ownership, property valuation, taxes paid, and expenditures made in the several groups of local units of government in 1930

Unit of government	Population	Motor-vehicle ownership	Valuation	Taxes paid	Expenditures made
Towns.....	Percent 37.1	Percent 41.4	Percent 37.0	Percent 29.3	Percent 39.1
Places up to 2,500.....	10.0	10.6	7.3	8.4	7.4
Places 2,500 to 15,000.....	12.4	10.3	10.1	11.8	10.3
Places 15,000 to 75,000.....	20.8	20.2	21.9	23.9	21.3
Milwaukee.....	19.7	17.5	23.7	26.6	21.9
State.....	100.0	100.0	100.0	100.0	100.0

tures, and to show them again would double this item of apparent expenditures over a period of years.

The total also does not include purchase of new equipment, gravel pits, etc., by the counties. All of these items are paid for by the counties, but are later charged back to each individual piece of work as a part of the construction and maintenance cost, so that at the end of a series of years this expenditure appears in the construction and maintenance expenditures of

the county. In short, each county sets up a revolving fund for machinery, etc., and charges back to work a sufficient fund to recover its cost within its life.

The total highway expenditures do include interest on all bonds and indebtedness (approximately \$2,800,000), and all supervision costs and general overheads.

There was considerable transfer of funds as a result of grants of aid. In 1930, the towns and villages received from the State \$25 per mile, and the cities from \$50 to \$200 per mile, according to their population, the largest amount per mile being paid to Milwaukee city.

This aid totaled \$1,954,000 to all units of government.

The sources of the funds from which the expenditures were made were as follows:

	Amount	Percent
Federal aid.....	\$3,049,700	5.0
Taxation of property.....	21,694,600	35.4
Imposts on motor vehicles.....	26,025,800	32.7
Miscellaneous sources.....	7,048,100	11.5
Proceeds of bond issues and loans.....	9,462,200	15.4
Total.....	61,280,400	100.0

Table 14 gives the total expenditures on each of the highway systems of the State and the village and city roads and streets; and the expenditures for construction and maintenance made under State and county supervision on each of these classes of road. The construction and maintenance figures do not include interest paid on bonds or the general overhead cost not charged to the work at the time it was done. These costs are included in the balance shown in the last column of the table.

TABLE 14.—Expenditures on the several highway systems and the local streets in 1930, including construction and maintenance expenditures under State and county supervision

Highway system	Mileage in system	Total expended	Percentage of total expenditures	Expenditure under State and county supervision		Balance not accounted for in two preceding columns ¹
				Construction	Maintenance	
Federal aid:						
Primary.....	2,345	\$17,121,500	28.0	\$7,021,900	\$1,244,700	\$1,799,900
Secondary.....	3,246			5,422,700	1,632,300	
State trunk.....	4,627	7,797,200	12.7	4,948,000	2,113,900	735,300
Total, State system.....	10,218	24,918,700	40.7	17,392,600	4,990,900	2,535,200
County trunk.....	13,827	9,449,100	15.4	3,662,300	4,662,300	1,124,500
Town local.....	58,934	13,910,900	22.7	2,807,000	466,600	² 10,637,300
Village local.....	1,567	1,590,000	2.6	91,200	3,100	² 12,907,400
City local.....	4,993	11,411,700	18.6			
All highways.....	89,539	61,280,400	100.0	23,953,100	10,122,900	27,204,400

¹ Interest and general overhead charges are included in this column.² Includes also expenditures made under local supervision.

Of all expenditures on highways and streets in Wisconsin in 1930, there were expended on the State trunk highway system \$24,918,700, or 40.7 percent; on the county trunk highway system, \$9,449,100, or 15.4 percent; on the town local rural highways, \$13,910,900, or 22.7 percent; on local village streets, \$1,590,000, or 2.6 percent; on local city streets, \$11,411,700, or 18.6 percent. Expenditures on all rural highways were \$48,278,700, or 78.8 percent; and on urban and village streets, \$13,001,700 (21.2 percent, or \$1,982 per mile). These expenditures include interest paid on bonds and the cost of supervision and overhead.

CONSTRUCTION ABSORBS BULK OF EXPENDITURES ON STATE WORK

The figures on construction and maintenance given in table 14 cover the cost of all construction and maintenance on the Federal aid, State trunk, and county trunk highway systems in 1930. On the local roads and streets the great bulk of the expenditures was made by the local authorities, and the work was done under their supervision. Local expenditures administered by the local units were divided as follows:

Towns:	
Construction.....	\$2,899,600
Maintenance.....	7,068,400
Interest, overhead, etc.....	419,300
Total.....	10,387,300
Cities and villages:	
Construction.....	5,964,700
Maintenance.....	4,351,000
Interest, overhead, etc.....	2,589,900
Total.....	12,905,600

No street or highway work was done in the city of Milwaukee under State or county supervision. Expenditures on roads and streets in that city were \$4,311,900.

Of all expenditures for construction and maintenance on the Federal-aid and State trunk systems, 78 percent was spent for construction and 22 percent for maintenance. For all work under State and county supervision the amount expended for construction was 70 percent, and that for maintenance 30 percent. The county system was the only one on which the expenditures for maintenance exceeded those for construction. However, the expenditure on the town roads was predominantly for maintenance, as is shown in the tabulation of expenditures by local authorities, given above.

LOCATION OF EXPENDITURES SHOWN

The following tabulation shows the distribution of highway expenditures according to the classes of local unit in which the expenditures were made:

	Amount	Percent
In towns.....	\$45,452,900	74.2
In places up to 2,500.....	3,545,400	5.8
In places 2,500 to 15,000.....	2,805,200	4.6
In places 15,000 to 75,000.....	5,165,000	8.4
In Milwaukee.....	4,311,900	7.0
Total.....	61,280,400	100.0

As would be expected, the major part of the expenditures (74.2 percent) were made in the towns, i.e., on rural roads.

The figures given above, when compared with those given in table 8, show the following ratios between the expenditures made on highways and streets within the various classes of local unit and the taxes paid in those units:

	Ratio of highway expenditures to highway taxes
Towns.....	1.97
Places up to 2,500.....	.74
Places 2,500 to 15,000.....	.50
Places 15,000 to 75,000.....	.48
Milwaukee.....	.48
All cities and villages.....	.53

There were 18 counties out of the 71 in which the total highway taxes collected were greater than the total highway expenditures made in them. In these counties, the excess of highway taxes over highway expenditures was \$5,145,600, of which Milwaukee County contributed \$2,884,300, or 56.1 percent. Nearly 25 percent of the aggregate highway taxes collected in these counties was expended in other counties. Milwaukee County contributed 26.5 percent of its highway taxes to work in other counties.

TABLE SHOWS ULTIMATE SOURCES OF HIGHWAY FUNDS DERIVED FROM TAXES AND IMPORTS

Of the total expenditures for highways the sum of \$48,768,500 was obtained from taxes and imposts paid to the State, county, and local governments. Funds from other sources consisted of \$3,049,700 in the form of Federal aid and \$9,462,200 from bonds and loans. The proceeds from bonds and loans were expended on the roads and streets of the State in the following amounts:

TABLE 15.—Approximate amounts of the 1930 taxes and imposts expended on the current highway program, listed according to highway system, type of tax, and class of local unit in which the tax was paid

IMPOSTS ON GENERAL PROPERTY											
Paid by taxpayers in—	Highway system										
	State trunk		County trunk		Town local		City and village local		All highways		
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Percent age of total
Towns.....	\$1,616,400	11.7	\$3,114,900	22.6	\$9,070,700	65.7	-----	-----	\$13,802,000	100.0	63.6
Places up to 2,500.....	317,800	20.9	612,400	40.3	224,400	14.8	\$365,000	24.0	1,519,600	100.0	7.0
Places 2,500 to 75,000.....	910,200	19.0	1,754,000	36.7	642,800	13.4	1,478,200	30.9	4,785,200	100.0	22.1
Milwaukee.....	87,100	5.5	167,800	10.6	61,500	3.9	1,271,400	80.1	1,587,800	100.0	7.3
Total.....	2,931,500	13.5	5,649,100	26.0	9,999,400	46.1	3,114,600	14.4	21,694,600	100.0	100.0
IMPOSTS ON MOTOR VEHICLES											
Towns.....	\$5,012,400	73.8	\$1,050,300	15.5	\$494,700	7.3	\$227,400	3.4	\$6,784,800	100.0	33.9
Places up to 2,500.....	1,519,400	73.8	318,400	15.5	150,000	7.3	68,960	3.4	2,056,700	100.0	10.3
Places 2,500 to 75,000.....	4,994,600	73.8	1,046,500	15.5	493,000	7.3	226,690	3.4	6,760,700	100.0	33.7
Milwaukee.....	3,268,100	73.8	684,800	15.5	322,500	7.3	148,200	3.4	4,423,600	100.0	22.1
Total.....	14,794,500	73.8	3,100,000	15.5	1,460,200	7.3	671,100	3.4	20,025,800	100.0	100.0
MISCELLANEOUS IMPOSTS AND TAXES											
Towns.....	-----	-----	-----	-----	\$2,311,300	100.0	-----	-----	\$2,311,300	100.0	32.8
Places up to 2,500.....	-----	-----	-----	-----	-----	-----	\$677,300	100.0	677,300	100.0	9.6
Places 2,500 to 75,000.....	-----	-----	-----	-----	-----	-----	2,818,600	100.0	2,818,600	100.0	40.0
Milwaukee.....	-----	-----	-----	-----	-----	-----	1,240,900	100.0	1,240,900	100.0	17.6
Total.....	-----	-----	-----	-----	2,311,300	32.8	4,736,800	67.2	7,048,100	100.0	100.0
ALL IMPOSTS AND TAXES											
Towns.....	\$6,628,800	28.9	\$4,165,200	18.2	\$11,876,700	51.9	\$227,400	1.0	\$22,898,100	100.0	46.9
Places up to 2,500.....	1,837,200	43.2	930,800	21.9	374,400	8.8	1,111,200	26.1	4,253,600	100.0	8.7
Places 2,500 to 75,000.....	5,904,800	41.1	2,800,500	19.5	1,135,800	7.9	4,523,400	31.5	14,364,500	100.0	29.5
Milwaukee.....	3,355,200	46.3	852,600	11.7	384,000	5.3	2,660,500	36.7	7,252,300	100.0	14.9
Total from taxes and imposts..	17,726,000	36.4	8,749,100	17.9	13,770,900	28.2	8,522,500	17.5	48,768,500	100.0	100.0
Federal aid.....	3,049,700	-----	-----	-----	-----	-----	-----	-----	3,049,700	-----	-----
Total.....	20,775,700	40.1	8,749,100	16.9	13,770,900	26.6	8,522,500	16.4	51,818,200	100.0	-----

Federal-aid system.....	\$2,500,000
State trunk system.....	1,643,000
County trunk system.....	700,000
Town roads.....	140,000
Village streets.....	411,000
City streets.....	4,068,200
Total.....	9,462,200

Table 15 gives the results of an analysis the purpose of which was to determine the amounts contributed by taxpayers in the various classes of local unit to the funds expended on the several highway systems and the village and city streets. The Federal-aid money, coming directly from the United States Government, is naturally not subject to analysis on this basis. It is possible to forecast the manner in which borrowed money will be repaid, and thus allocate the proceeds of bond sales to the various local units, but such repayments have nothing to do with taxes paid in 1930. For that reason it was thought best to restrict the analysis to the \$48,768,500 which was actually derived from taxes and imposts.

The motor-vehicle imposts were allocated to the various local units according to the percentages given in table 5, which are based on the results of the questionnaire survey and the analysis of registration statistics. The allocation of the general property taxes and miscellaneous imposts was accomplished by determining as closely as possible, from the data obtained in the survey, the ultimate sources of all taxes and imposts raised by the county and local governments

and spent on the several road systems and the village and city streets. The results of the analysis are necessarily approximate, but are believed to represent fairly accurately the true situation in 1930.

Many significant relationships can be derived from a study of table 15, particularly when it is analyzed in connection with the data regarding travel on the various highway systems, which is presented and discussed in the following paragraphs.

AVERAGE MILEAGE TRAVELED AND GASOLINE CONSUMPTION

The average mileage traveled and the average gasoline consumption in Wisconsin by Wisconsin motor vehicles in 1930 are given in table 16. The ownership of these motor vehicles is classified according to the place of residence of the owners. The mileage traveled for each of these classes is divided as between roads and streets located in towns (rural sections), in villages, and in incorporated cities. The data are also classified by type of vehicle. These facts were determined by means of the personal reports or schedules obtained from 5,116 motor-vehicle owners, as described on page 22.

About two thirds of all motor-vehicle traffic takes place in the rural districts, and about one third in the urban districts, including villages. According to table 16, 64.1 percent of the average miles traveled occurred in the towns, 5.2 percent in the villages, and 30.7 percent in the cities. The automobiles and trucks owned in towns traveled, on the average, 5,751 miles in 1930;

TABLE 16.—Average mileage traveled and average gasoline consumption in Wisconsin by Wisconsin motor vehicles in 1930

Place of ownership and kind of motor vehicle	Reports tabulated	Average annual gasoline consumption	Average annual travel			
			Totals	In towns	In villages	In cities
		Gallons	Miles per gallon	Miles	Miles	Miles
Towns:						
Automobiles.....	1,903	376	14.8	5,583	4,787	298
Motor trucks.....	269	635	10.9	6,924	5,836	325
Both automobiles and motor trucks.....	2,172	409	14.1	5,751	4,917	302
Percentage.....	42.5			100.0	85.5	5.2
Villages:						
Automobiles.....	474	536	13.9	7,467	5,871	905
Motor trucks.....	90	938	10.8	10,147	7,633	1,714
Both automobiles and motor trucks.....	564	600	13.2	7,895	6,152	1,034
Percentage.....	11.0			100.0	77.9	13.1
Cities other than Milwaukee:						
Automobiles.....	1,382	615	14.1	8,671	4,942	358
Motor trucks.....	216	1,060	10.5	11,103	5,595	501
Both automobiles and motor trucks.....	1,598	675	13.3	8,999	5,030	377
Percentage.....	31.2			100.0	55.9	4.2
Milwaukee:						
Automobiles.....	689	716	13.1	9,370	3,526	218
Motor trucks.....	93	867	10.4	9,027	1,553	145
Both automobiles and motor trucks.....	782	734	12.7	9,330	3,292	210
Percentage.....	15.3			100.0	35.3	2.2
Total for State:						
Automobiles.....	4,448	520	14.1	7,329	4,755	369
Motor trucks.....	668	851	10.6	9,002	5,404	544
Both automobiles and motor trucks.....	5,116	563	13.4	7,549	4,841	392
Percentage.....	100.0			100.0	64.1	5.2

85.5 percent of this mileage was on rural roads, 5.2 percent on village streets, and 9.3 percent on city streets. The village-owned automobiles and trucks traveled 7,895 miles in 1930, on the average; 77.9 percent of this mileage was on rural roads, 13.1 percent on village streets, and 9 percent on city streets.

The city-owned motor vehicles are divided between the vehicles owned in Milwaukee, and those owned in the other cities of the State. The average 1930 mileage of all the motor vehicles owned in the cities, not including Milwaukee, amounted to 8,999 miles; 55.9 percent of this mileage was on the rural roads, 4.2 percent on village streets, and 39.9 percent on city streets. The average mileage of motor vehicles owned in Milwaukee somewhat exceeds that of vehicles owned in the other cities. The motor vehicles owned in Milwaukee averaged 9,330 miles of travel; 35.3 percent of this was on rural roads, 2.2 percent on village streets, and 62.5 percent on city streets. It may be inferred that a very large part of this travel on city streets occurred in Milwaukee itself. The Milwaukee average of 9,330 miles per year is 62 percent in excess of the average for town-owned vehicles, 5,751 miles. In general, automobiles owned in incorporated cities and villages produced larger average mileages than those owned in rural areas.

The motor-truck mileage for the State as a whole averages 9,002 miles, which is 23 percent above the average number of miles traveled by automobiles. In each of these ownership classifications, the motor truck is used on the average to a greater degree than the automobile, except in Milwaukee. In Milwaukee, the average miles traveled by automobiles are 9,370, and the average truck mileage is 9,027.

The average gasoline consumption, according to this investigation, amounted to 563 gallons per motor vehicle; for automobiles, the average was 520; and for motor trucks it was 851. The average consumption of gasoline for motor trucks exceeded that of automobiles by 64 percent; the average mileage of motor trucks

exceeded that of automobiles by only 23 percent. This difference is accounted for by the fact that the automobiles averaged 14.1 miles per gallon of gasoline, and the motor trucks averaged only 10.6 miles.

The average yearly consumption of 563 gallons of gasoline by motor vehicles operating 12 months in 1930 is the weighted average used by those owned in towns, 409 gallons; in villages, 600 gallons; in cities other than Milwaukee, 675 gallons; and in Milwaukee, 734 gallons. The average mileage per gallon for all motor vehicles was 13.4 miles.

MILEAGE TRAVELED ON THE SEVERAL HIGHWAY SYSTEMS AND THE LOCAL STREETS

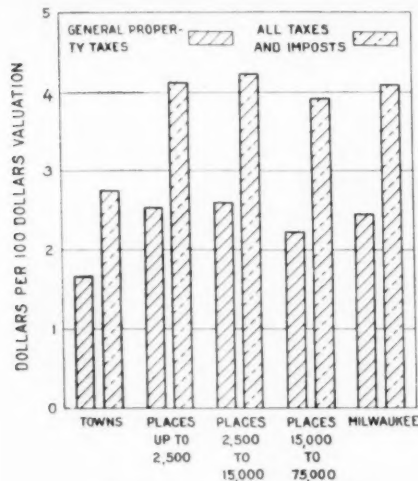
The mileage traveled by the average motor vehicle over the various systems of highways and streets in 1930 is shown in table 17. Ownership of cars is classi-

TABLE 17.—Average mileage traveled on the highway systems and local streets of Wisconsin by Wisconsin motor vehicles in 1930

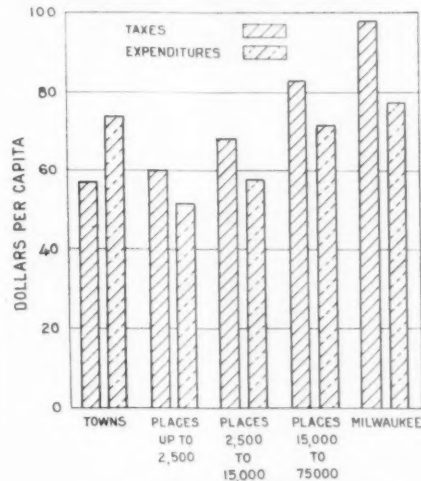
Place of ownership and kind of motor vehicle	Average miles traveled						
	Total	State trunk highways	County trunk highways	Local highways and streets			
				Total	Towns	Villages	Cities
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Towns:							
Automobiles.....	5,583	3,379	1,198	1,006	845	39	122
Motor trucks.....	6,924	3,567	1,714	1,643	1,353	40	250
Both automobiles and motor trucks.....	5,751	3,403	1,263	1,085	908	39	138
Percentage.....	100.0	59.2	22.0	18.8	83.7	3.6	12.7
Villages:							
Automobiles.....	7,467	4,869	1,210	1,388	600	448	340
Motor trucks.....	10,147	5,056	2,191	2,900	1,492	1,035	373
Both automobiles and motor trucks.....	7,895	4,898	1,367	1,630	742	542	346
Percentage.....	100.0	62.0	17.3	20.7	45.5	33.3	21.2
Cities other than Milwaukee:							
Automobiles.....	8,671	4,768	856	3,047	327	40	2,680
Motor trucks.....	11,103	5,122	1,344	4,638	644	61	3,933
Both automobiles and motor trucks.....	8,999	4,816	921	3,262	370	43	2,849
Percentage.....	100.0	53.5	10.2	36.3	11.4	1.3	87.3
Milwaukee:							
Automobiles.....	9,370	3,467	333	5,570	105	30	5,435
Motor trucks.....	9,027	1,438	232	7,357	41	66	7,250
Both automobiles and motor trucks.....	9,330	3,225	322	5,783	98	34	5,651
Percentage.....	100.0	34.6	3.4	62.0	1.7	0.6	97.7
State:							
Automobiles.....	7,329	3,983	959	2,387	543	81	1,763
Motor trucks.....	9,002	3,974	1,452	3,576	960	184	2,432
Both automobiles and motor trucks.....	7,549	3,982	1,024	2,543	598	95	1,850
Percentage.....	100.0	52.7	13.6	32.7	23.5	3.7	72.8

1 Percentage figures in columns 2, 3, and 4 give the distribution of motor vehicle travel on the State system, the county system, and the local roads and streets. Percentage figures in columns 5, 6, and 7 give the distribution of local travel on town roads and village and city streets.

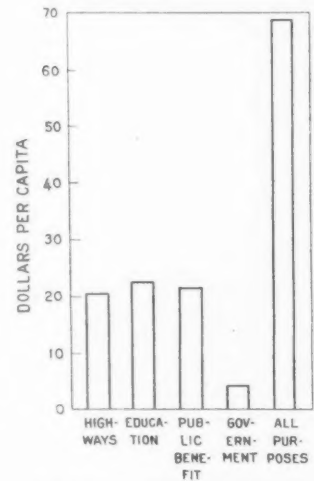
fied in the same manner as in table 16. Mileages shown here agree closely with the results of traffic surveys made in other States. The State trunk highway system carried 52.7 per cent of the total motor vehicle traffic. The actual percentage traveled on the State trunk highway system is higher than this, as only travel by Wisconsin cars is included. Travel by out-of-State cars, which apparently use the State trunk highway system almost exclusively, would raise this percentage and lower all other percentages appreciably. Only 13.6 percent of all travel occurred on the county trunk highway system, while 33.7 percent of the travel occurred on the local highways, which include village and city streets. It is interesting to note that 72.8 percent of the travel on local highways occurred on the local streets in cities, while only 23.5 percent occurred on the local roads in towns, and 3.7 percent on the local streets in villages.



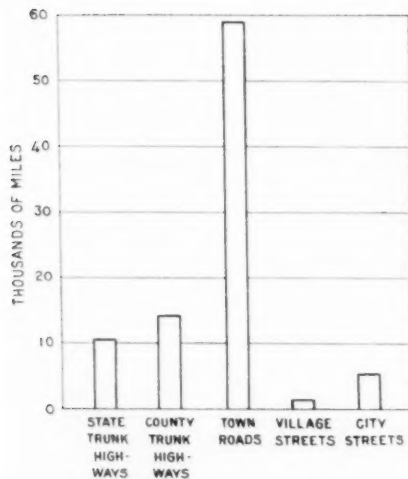
AVERAGE TAX RATES IN THE SEVERAL CLASSES OF GOVERNMENTAL UNIT



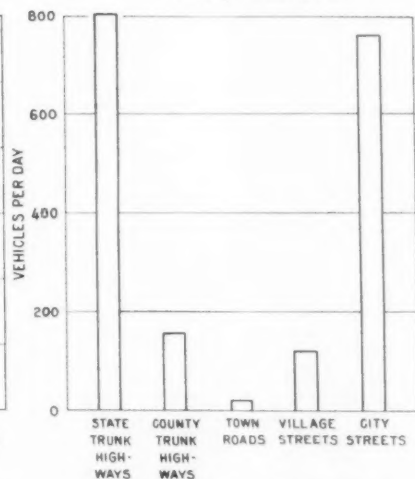
PER CAPITA TAXES AND PER CAPITA EXPENDITURES IN THE SEVERAL CLASSES OF GOVERNMENTAL UNIT



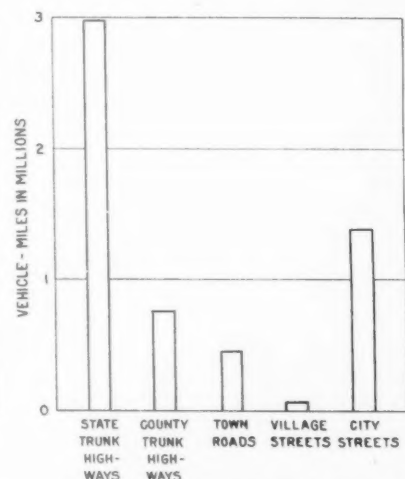
PER CAPITA EXPENDITURES CLASSIFIED BY PURPOSE



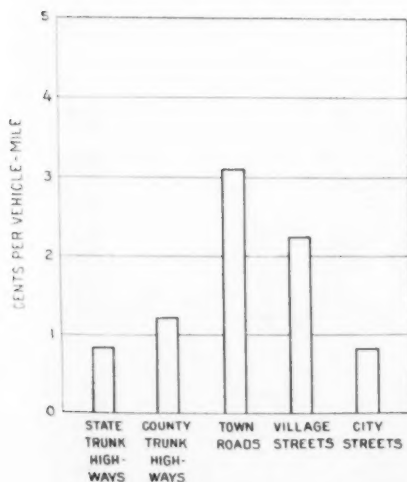
MILEAGE OF HIGHWAY SYSTEMS AND URBAN STREETS



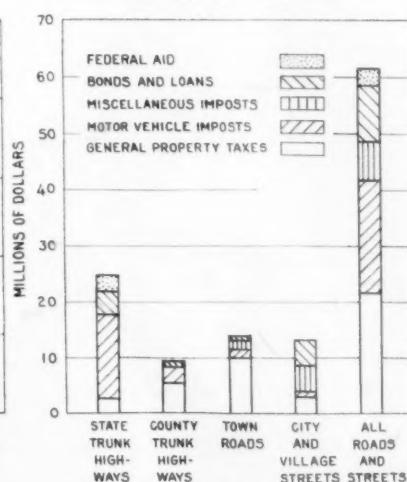
AVERAGE DENSITY OF TRAFFIC ON HIGHWAY SYSTEMS AND URBAN STREETS



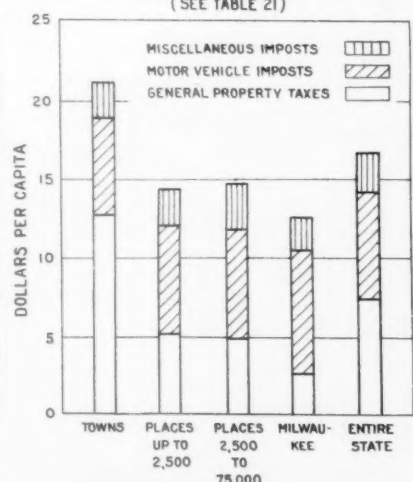
TOTAL TRAFFIC OF WISCONSIN VEHICLES IN 1930 ON HIGHWAY SYSTEMS AND URBAN STREETS (SEE TABLE 21)



EXPENDITURES PER VEHICLE-MILE ON HIGHWAY SYSTEMS AND URBAN STREETS



TOTAL EXPENDITURES ON HIGHWAY SYSTEMS AND URBAN STREETS, SHOWING SOURCES OF FUNDS



PER CAPITA CONTRIBUTIONS BY RESIDENTS OF THE SEVERAL CLASSES OF GOVERNMENTAL UNIT TO TAXES AND IMPOSTS EXPENDED ON ROADS AND STREETS

It should also be noted that out of a total of 7,549 miles traveled on the average by all motor vehicles of the State, 1,850 miles, or 24.5 percent of this mileage, was carried by city streets.

The figures contained in this table also indicate that the motor vehicles owned in Milwaukee averaged 9,330 miles, of which 5,651 miles, or 60.5 percent, occurred on city streets; 3,225 miles, or 34.6 percent, occurred on State trunk highways; 322 miles, or 3.4 percent on the county trunk highways; and the remaining 132 miles, or 1.4 percent occurred on town roads and village streets. For motor-vehicles owned in cities other than Milwaukee, almost the same conditions prevail with respect to the use of various highway systems. When city-owned vehicles go outside of their respective cities, they appear to use the State trunk highways much more than county and local roads.

TRAFFIC DISTRIBUTION GROUPED BY COUNTIES

A further distribution of travel and gasoline consumption with respect to the area of the State as a whole was made by grouping the 71 counties according to population per square mile. The classification is shown in table 18. The counties falling into each

TABLE 18.—Classification of groups of counties according to population per square mile

Group	Number of counties	Population per square mile	Group	Number of counties	Population per square mile
1 ¹	1	3,086	4.....	19	31 to 45
2.....	12	76 to 400	5.....	14	21 to 30
3.....	10	46 to 75	6.....	15	Less than 20

¹ Milwaukee County.

group, while not always contiguous, show a rather marked segregation, especially those having less than 20 persons per square mile and those having 75 to 400 persons per square mile.

Table 19 is a representation of travel and gasoline consumption by motor-vehicle owners residing in the towns, villages, and cities of the six county groups described. It discloses the variations in the average mileage traveled which are due more or less to density of population. The general tendency is for the average mileage and gasoline consumed per vehicle to decrease as the population grows less dense. There are several exceptions, but the principal deviation is found in the counties included in group 6, where the population per square mile is the lowest.

TRAVEL OF URBAN AND RURAL VEHICLES DISCUSSED

In table 4 there was given the distribution of registered motor vehicles according to place of ownership. This distribution may be summarized with respect to urban and rural ownership, as follows:

Place of motor vehicle registration	Number registered
In towns.....	332, 379
In incorporated places other than Milwaukee.....	325, 070
In Milwaukee.....	136, 955
Total.....	794, 404

The average mileages given in table 17, when multiplied by the numbers of registered vehicles as listed above, yield the figures on vehicle-mileage by place of ownership which are shown in table 20. Thus we find that 35.7 percent of the travel on the State system in 1930 was originated by rurally owned vehicles, and 64.3

TABLE 19.—Motor vehicle travel in Wisconsin in 1930 by ownership in the 6 groups of counties ¹

Item	State totals and averages	Groups of counties					
		Milwaukee County	Group 2	Group 3	Group 4	Group 5	Group 6
Travel by automobiles:							
Average mileage:							
All automobiles.....	7,329	9,531	7,071	7,140	6,318	5,847	7,658
Town-owned automobiles.....	5,583	8,842	5,429	5,521	5,321	5,146	7,053
Village-owned automobiles.....	7,467	10,645	7,245	8,348	6,765	6,589	9,782
City (except Milwaukee) owned automobiles.....	8,671	10,352	8,299	9,168	8,563	8,223	8,521
Milwaukee-owned automobiles.....	9,370	9,370					
Average gallons of gasoline consumed.....	520	736	485	489	428	391	580
Average motor fuel tax paid.....	\$10.40	\$14.72	\$9.70	\$9.78	\$8.56	\$7.82	\$11.60
Travel by motor trucks:							
Average mileage:							
All trucks.....	9,002	9,345	10,283	8,423	7,892	7,098	9,980
Town-owned trucks.....	6,924	10,704	7,778	6,549	6,666	4,884	9,191
Village-owned trucks.....	10,147	9,891	13,384	7,990	8,509	11,231	8,850
City (except Milwaukee) owned trucks.....	11,103	11,778	11,631	11,333	9,397	10,163	10,533
Milwaukee-owned trucks.....	9,027	9,027					
Average gallons of gasoline consumed.....	851	890	996	749	785	632	833
Average motor fuel tax paid.....	\$17.02	\$17.80	\$19.92	\$14.98	\$15.70	\$12.64	\$16.66
Travel by all motor vehicles:							
Average mileage:							
All vehicles.....	7,549	9,509	7,497	7,341	6,524	6,072	7,926
Town-owned vehicles.....	5,751	9,080	5,738	5,679	5,467	5,112	7,232
Village-owned vehicles.....	7,895	10,502	8,309	8,293	7,042	7,252	9,633
City (except Milwaukee) owned vehicles.....	8,999	10,427	8,723	9,521	8,701	8,548	9,186
Milwaukee-owned vehicles.....	9,330	9,330					
Average gallons of gasoline consumed.....	563	753	552	530	475	429	609
Average motor fuel tax paid.....	\$11.26	\$15.06	\$11.04	\$10.60	\$9.50	\$8.58	\$12.18

¹ This table shows the variations in the mileage and gasoline consumption in the several groups of counties, as indicated by the survey.

TABLE 20.—Relative contributions of rural and urban motor vehicles to travel on the highway systems and local streets of Wisconsin in 1930

Annual travel on—	Place of ownership				Percent- age of total travel
	Towns	Incorporated places other than Milwaukee	Milwaukee	All Wisconsin vehicles	
State system:					
Vehicle-miles ¹	1,131.1	1,590.5	441.7	3,163.3	
Percent.....	35.7	50.3	14.0	100.0	52.7
County system:					
Vehicle-miles ¹	419.8	349.6	44.1	813.5	
Percent.....	51.6	43.0	5.4	100.0	13.6
Town roads:					
Vehicle-miles ¹	301.8	159.9	13.4	475.1	
Percent.....	63.5	33.7	2.8	100.0	7.9
Village and city streets:					
Vehicle-miles ¹	58.8	707.7	778.6	1,545.1	
Percent.....	3.8	45.8	50.4	100.0	25.8
All roads and streets:					
Vehicle-miles ¹	1,911.5	2,807.7	1,277.8	5,997.0	
Percent.....	31.9	46.8	21.3	100.0	100.0

¹ In millions.

percent by urban vehicles. On the county system the division was approximately equal—51.6 rural and 48.4 urban. On the town roads rural vehicles contributed 63.5 percent of the vehicle-mileage. Traffic in the cities was predominantly urban, town-owned vehicles contributing only 3.8 percent.

TABLE SHOWS RELATION OF TRAVEL AND EXPENDITURES

By using the facts as to travel in Wisconsin developed by the survey of traffic in connection with the known mileage of each system of highways, the known motor-vehicle license fees and gasoline taxes, and the known expenditures, it was possible to construct table 21,

showing many basic relationships between the several highway systems.

TABLE 21.—*Travel and expenditures upon the various highway systems and the local streets in 1930*¹

Item	Total	State trunk highways	County trunk highways	Local highways and streets		
				Towns	Villages	Cities
Vehicle-miles traveled:						
Total on each (in millions).....	5,661.8	2,986.5	768.0	448.5	71.2	1,387.5
Percentage on each.....	100.0	52.7	13.6	7.9	1.3	24.5
Daily average per mile of highway.....	173	801	152	21	125	761
Distribution of motor-vehicle revenues:						
If prorated according to vehicle-mileage.....	\$20,025,800	\$10,553,600	\$2,723,500	\$1,585,900	\$249,700	\$4,913,000
As actually expended.....	\$20,025,800	\$14,794,500	\$3,100,000	\$1,460,200	\$38,900	\$632,200
Expenditures:						
Total on each.....	\$61,280,400	\$24,918,700	\$9,449,100	\$13,910,900	\$1,590,000	\$11,411,700
Percentage on each.....	100.0	40.7	15.4	22.7	2.6	18.6
Expenditures per vehicle-mile on each (in cents).....	1.08	0.83	1.23	3.10	2.23	0.82

¹ This table is based upon the facts as to travel ascertained by the survey of traffic, motor-vehicle imposts, and highway expenditures. In making the computations the mileage traveled by motor vehicles from other States and motor busses and regularly routed motor trucks was disregarded. This mileage was traveled almost exclusively on the State trunk highway system. To this extent, all amounts and percentages shown for travel on the State trunk highway system are low in the case of these roads and high in the case of the other highway systems. Earnings shown are based on the assumption that each system of highways earns in proportion to the mileage traveled upon it.

The first division in the table shows the millions of vehicle-miles traveled on each highway system in 1930, the percentage that this vehicle-mileage is of all miles traveled, and the average daily traffic per mile of highway on each system. The State trunk highways, although comprising only 11.4 percent of the total road and street mileage of the State, carried 52.7 percent of the total traffic; the county trunk highways carried 13.6 percent; and the local highways, including town roads, village and city streets, carried 33.7 percent. The city streets, which alone carried a total of 1,387,500,000 miles, accounted for 24.5 percent of the total traffic. The traffic on the State trunk highways and on the city streets constituted 77.2 percent of the total motor-vehicle traffic of the State.

It will be noted that the average daily traffic on the State trunk highway system so computed is 801 per day; on the county trunk highways, 152 per day. The average on town local roads is 21 per day, while on village streets it is 125, and on city streets, 761. The average movement per mile over all streets and highways in the State was 173 vehicles. The State trunk highways carried, on the average, over five times as much traffic per mile as the county trunk highways, and about 40 times as much traffic per mile as the local rural highways.

The next section in the table concerns itself with a hypothetical distribution of the expenditures from motor-vehicle revenues, in proportion to the vehicle-mileage on each system. Immediately below these figures are those showing how the net proceeds of the motor-vehicle imposts were actually distributed to these highway systems in 1930. Considerably more motor-vehicle money was spent on the State trunk highways than would be called for by a distribution according to vehicle-mileage. On the county system and the town roads the figures do not differ greatly, the county roads receiving somewhat more and the town

roads somewhat less than the amount indicated in the distribution according to vehicle-mileage. In 1930 the Wisconsin legislature doubled the allowance of motor vehicle money to the towns; so that if the expenditures of a later year were analyzed the town roads would no doubt be shown to receive considerably more than their quota on the basis of traffic. The village and city streets, on the other hand, received relatively little motor-vehicle money, the bulk of the funds being derived from property taxes, including special assessments. The fact that so great a share of the motor-vehicle revenues goes to the State and county trunk highways is in line with the principle that motor vehicle money should be expended very largely on the roads of general service, while revenues from property taxation should be devoted primarily to urban streets and the land-serving local roads.

In the final section of table 21 the expenditures on the several systems, previously given in table 14, are repeated, together with the corresponding percentages and the expenditures per vehicle-mile on each system.

The expenditures on the State highway system were 40.7 percent of the total. The State system carried, as indicated in the first section of the table, 52.7 percent of the total traffic. The difference between the traffic ratio and the expenditure ratio is not very marked in case of the county trunk highways. There the traffic amounted to 13.6 percent of the total traffic, and expenditures constituted 15.4 percent of the total expenditures.

Among local highways and streets, the town roads although carrying only 7.9 percent of all traffic represent expenditures of 22.7 percent of the total. Village streets are less out of line, with 1.3 percent of total traffic and 2.6 percent of expenditure. City streets reverse the traffic-expenditure ratio, with 24.5 percent of the vehicle mileage and 18.6 percent of total expenditures.

The last item, and a very interesting one, shows the number of cents expended on each highway system per vehicle-mile of travel on the system. It will be noted that on all highway systems, the highway cost per mile of travel was 1.08 cents; on the State trunk-highway expenditure it was 0.83 cent; on the county trunk-highway system, 1.23 cents; on the local town highways it was 3.1 cents; on the local village streets, 2.23 cents; and on the local city streets, 0.82 cent. The expenditures per mile of traffic were less on the city streets than on any other highway system, while the State trunk-highway system showed the lowest rate of all rural highways.

In computing this table, the traffic of motor vehicles from outside of Wisconsin, of motor busses, and of motor trucks traveling on regular routes, was not included. Accordingly, the showing for the State trunk highway system, on which practically all of this travel occurs, is less favorable than would have been the case had these figures been included. On the other hand, the showing of all other road systems would have been lowered.

STUDY OF SURVEY DATA YIELDS SIGNIFICANT FACTS REGARDING TAXES, TRAVEL, AND EXPENDITURES

The point is now reached where it is possible to draw together and compare the essential facts developed by the survey, and from them derive certain conclusions regarding the relations existing in Wisconsin in 1930, between the following factors:

1. Taxes paid for highways by the residents of the various local units of government;

2. The funds expended on the several highway systems and the local streets;

3. The relative contributions by motor-vehicle owners in the various local units to the total travel of Wisconsin vehicles in the State;

4. The relative amounts of travel on the several highway systems and the local streets.

The relation between taxes paid in the various local units of government and expenditures on the road systems and local streets of the State may be derived from a study of table 15. Tables 16, 17, and 20 give the necessary information regarding the travel of motor vehicles; and table 21 shows certain relations between travel and expenditures. In the statement of conclusions given below, references are made to the tables upon which each deduction is based.

CONCLUSIONS

1. Rural property pays no tax for urban streets (table 15).

2. Sixty-one percent of the road tax on urban property goes for rural roads; 39 percent for city streets (table 15).

3. Of the total road tax on rural property (table 15):

(a) 11.7 percent goes to State trunk highways;

(b) 22.6 percent goes to county trunk highways;

(c) 65.7 percent goes to local rural (town) roads.

4. Of the total road tax on city property (table 15):

(a) 16.7 percent goes to State trunk highways;

(b) 32.1 percent goes to county trunk highways;

(c) 11.8 percent goes to local rural (town) roads;

(d) 39.4 percent goes to city and village streets.

5. Since, of the total property valuation of \$5,896,513,000, 37 percent, or \$2,181,710,000, was rural, and 63 percent, or \$3,714,803,000, was urban (p. 22 and table 15):

(a) Expenditures from property taxes for all highways were at the following rates:

Rural—63.3 cents per \$100;

Urban—21.2 cents per \$100.

(b) Expenditures from property taxes for State trunk highways were at the following rates:

Rural—7.4 cents per \$100;

Urban—3.5 cents per \$100.

(c) Expenditures from property taxes for county trunk highways were at the following rates:

Rural—14.3 cents per \$100;

Urban—6.8 cents per \$100.

(d) Expenditures from property taxes for local rural (town) roads were at the following rates:

Rural—41.6 cents per \$100;

Urban—2.5 cents per \$100.

(e) Expenditures from property taxes for city and village streets were at the following rates:

Rural—no tax;

Urban—8.4 cents per \$100.

6. Of the total property taxes expended on all roads (tables 15, 20, 21):

(a) 13.5 percent was expended on State trunk highways, upon which 52.7 percent of the total travel occurs;

(b) 26.0 percent was expended on county trunk highways, upon which 13.6 percent of the total travel occurs;

(c) 46.1 percent was expended on local rural (town) roads, upon which 7.9 percent of the total travel occurs;

(d) 14.4 percent was expended on city and village streets, upon which 25.8 percent of the total travel occurs.

7. Of the total motor-vehicle imposts expended on all classes of roads and streets (tables 15, 20):

(a) Rural motor-vehicle owners (residents of towns)

paid 33.9 percent, and travel by these same rural owners made up 31.9 percent of the total travel on all classes of roads and streets;

(b) City and village motor-vehicle owners paid 66.1 percent and made up 68.1 percent of the total travel.

RELATIONS ESTABLISHED BETWEEN HIGHWAY TAXES PAID, HIGHWAY EXPENDITURES, AND TRAVEL ON THE VARIOUS SYSTEMS

The total mileage of highways and streets in Wisconsin in 1930 was 89,539. The State highway system consisted of 10,218 miles, divided into 2,345 miles of primary Federal-aid highways, 3,246 miles of secondary Federal-aid highways, and 4,627 miles of other State trunk highways. The county highway system contained 13,827 miles; the local town roads, 58,934 miles; village streets, 1,567 miles; and city streets, 4,993 miles.

The total volume of traffic (exclusive of out-of-State vehicles) on all roads and streets in Wisconsin during the year 1930 was approximately 6 billion vehicle-miles, of which 52.7 percent occurred on the State highway system, 13.6 percent on the county system, 7.9 percent on town roads, and 25.8 percent on village and city streets.

The average density of traffic on the State highway system was 801 vehicles per day; on the county system, 152 vehicles per day; on the town roads, 21 vehicles per day; on village streets, 125 vehicles per day; on city streets, 761 vehicles per day.

Expenditures on the State highway system in 1930 were \$24,918,700, or 0.83 cents per vehicle-mile of travel; on the county system, \$9,449,100, or 1.23 cents per vehicle-mile; on the town roads, \$13,910,900, or 3.10 cents per vehicle-mile; on village streets, \$1,590,000, or 2.23 cents per vehicle mile; on city streets, \$11,411,700, or 0.82 cents per vehicle-mile.

Of the total property taxes expended on all roads, 13.5 percent was expended on the State highway system; 72.1 percent on county and town roads; and 14.4 percent on village and city streets.

Of the total of all taxes and imposts expended on all roads and streets, rural property and motor-vehicle owners paid 46.9 percent, and travel by rural vehicles made up 31.9 percent of the total travel on all roads and streets; city and village property and motor-vehicle owners paid 53.1 percent, and travel by city and village vehicles made up 68.1 percent of the total travel. These relations between highway taxes paid and travel were no doubt considerably modified by the increase of the gasoline tax from 2 to 4 cents per gallon, which occurred in 1931.

TABLE 22.—Comparison of taxation and expenditures in Wisconsin in 1930

\$1,000 in taxes ¹			\$1,000 in expenditures							
Residents of—	Pay—	In—	Division by purpose ²	Subdivision by highway system ³	Source of expenditure ⁴	Amount ⁵	Percent	Percentage contribution to traffic on system ⁶		
Towns.....	\$180.22	Property tax, \$509.95.	Education, \$325.77.	State highways, \$123.24.	Taxes paid in:					
Places up to 2,500.....	51.00				Towns.....	\$32.78	26.60	35.7		
Places 2,500 to 15,000.....	71.45				Villages and cities.....	54.89	44.53	64.3		
Places 15,000 to 75,000.....	136.91				Federal aid.....	15.08	12.24			
Milwaukee.....	160.37	Motor-vehicle fees and gasoline tax, \$98.84.	Highways, \$302.80.	County trunk highways, \$46.63.	Proceeds of bonds and loans.....	20.49	16.63			
Towns.....	33.50				Taxes paid in:					
Places up to 2,500.....	10.15				Towns.....	20.56	44.08	51.6		
Places 2,500 to 15,000.....	11.27				Villages and cities.....	22.62	48.51	48.4		
Places 15,000 to 75,000.....	22.09	Other miscellaneous taxes, \$301.21.	Public benefit, \$309.61.	Town roads, \$68.74.	Proceeds of bonds and loans.....	3.45	7.41			
Milwaukee.....	21.83				Taxes paid in:					
Towns.....	79.82				Towns.....	58.69	85.37	63.5		
Places up to 2,500.....	22.89				Villages and cities.....	9.36	13.62	36.5		
Places 2,500 to 15,000.....	34.94	Government, \$61.82.	Village and city streets, \$64.19.				Proceeds of bonds and loans.....	.69	1.01	
Places 15,000 to 75,000.....	79.52						Taxes paid in:			
Milwaukee.....	84.04						Towns.....	1.12	1.75	3.8
							Villages and cities.....	40.95	63.80	96.2
					Proceeds of bonds and loans.....	22.12	34.45			

¹ See tables 2, 5, and 6.² See table 10.³ See table 14.⁴ See table 15 and p. 29.⁵ Traffic of Wisconsin vehicles only. See table 20.

8. Of the total motor vehicle imposts (tables 15, 20, 21):

- 73.8 percent was expended on State trunk highways, upon which 52.7 percent of the total travel occurs;
- 15.5 percent was expended on county trunk highways, upon which 13.6 percent of the total travel occurs;
- 7.3 percent was expended on local rural (town) roads, upon which 7.9 percent of the total travel occurs;
- 3.4 percent was expended on city and village streets, upon which 25.8 percent of the total travel occurs.

9. Of all imposts and taxes expended on all roads (tables 15, 20, 21):

- 36.4 percent was expended on State trunk highways, upon which 52.7 percent of the total travel occurs;
- 17.9 percent was expended on county trunk highways, upon which 13.6 percent of the total travel occurs;
- 28.2 percent was expended on local rural (town) roads, upon which 7.9 percent of the total travel occurs;
- 17.5 percent was expended on city and village streets, upon which 25.8 percent of the total travel occurs.

10. Of the total of all taxes expended on all classes of roads and streets (tables 15, 20):

- Rural property and motor-vehicle owners paid 46.9 percent, and travel by rural vehicles made up 31.9 percent of the total travel on all classes of roads and streets;
- City and village property and motor-vehicle owners paid 53.1 percent and city and village vehicles made up 68.1 percent of the total travel.

TAXES AND EXPENDITURES COMPARED

Table 22 shows a comparison between the sources of \$1,000 in taxes in 1930 and the manner in which \$1,000 was expended in the same year. The data given in this table were obtained directly from, or computed from, tables given previously in the report.

If it were desired to make the tabulation analogous to a true balance sheet of receipts and outlays for the year, it would be necessary to include proceeds from bonds and loans on the left of the double line, and principal payments on the right; and also to make allowance for balances carried over and carried forward. The complete figures necessary for such a presentation were not available; so that expenditures as given cannot be said to balance receipts from taxes. It is believed, however, that table 22 gives a true picture of the relation between tax money received and actual expenditures in the year 1930.

PURPOSES OF TRAVEL

In undertaking the traffic survey, it was felt that it would be of some interest to know about how much of the indicated mileage of automobiles was for pleasure purposes, and how much was for business purposes; and also to get some idea of the travel and touring habits of Wisconsin motor-vehicle owners. This information was obtained from all automobile owners covered by the survey, but only about 40 percent of the schedules were tabulated in making up table 23. The average total mileages in this sample vary somewhat from the average mileages of the whole survey, because in making up the comparatively small sample, any automobile

going a most extraordinary mileage or for apparently extraordinary purposes was disregarded.

This tabulation indicates that practically 60 percent of all automobile travel is for business purposes, and 40 percent is for pleasure purposes. Also, that 35 percent of Wisconsin automobile owners drove into adjacent States in 1930, while only 7.5 percent went into adjacent and distant States both. About 43 percent of all Wisconsin automobiles apparently entered some other State in 1930. It is interesting to note that the farmers did by far the lowest percentage of touring in other States, while, as might be expected, residents of Milwaukee

TABLE 23.—Purposes of travel of 1,720 Wisconsin automobile owners in 1930, with some information as to their travel in other counties and States¹

Place of ownership	Reports tabulated	Average miles traveled			Number visiting other States			Average number of other counties visited	Average farthest number of miles away from home in Wisconsin
		Total	For business	For pleasure	Adjacent	Adjacent and distant	Total		
Towns.....	708	5,575	3,586	1,989	160	18	178	4.9	95
Percent.....			64.3	35.7	22.6	2.5	25.1		
Places up to 2,500.....	187	6,995	3,841	3,154	92	13	105	9.5	147
Percent.....			54.9	45.1	49.2	7.0	56.2		
Places 2,500 to 15,000.....	195	8,867	4,870	3,997	95	22	117	10.3	167
Percent.....			54.9	45.1	48.7	11.3	60.0		
Places 15,000 to 75,000.....	337	8,043	4,559	3,484	155	35	190	8.8	169
Percent.....			56.7	43.3	46.0	10.4	56.4		
Milwaukee.....	293	9,567	6,017	3,550	156	41	197	11.4	185
Percent.....			62.9	37.1	53.2	14.0	67.2		
Total for State.....	1,720	7,266	4,364	2,902	608	129	737	7.9	139
Percent.....			60.1	39.9	35.3	7.5	42.8		

¹ This is a tabulation of 40 percent of all reports of travel made in the survey. The same percentage of reports from each group of units of Government was used to produce a properly balanced sample.

did the most. Only 25.1 percent of the owners of motor vehicles residing in towns traveled in other States than Wisconsin; 67.2 percent of the Milwaukee motor-vehicle owners toured in other States.

In order to get some idea of how many counties in Wisconsin the owners visited, that information was also taken. The average motorist visited about eight counties other than his home county. Again, the farmers did by far the least traveling in other counties.

The owner's statement of the greatest number of miles which the automobile traveled in Wisconsin away

from its home garage was also recorded. The average touring limit was apparently 139 miles. Again, the farmers did far less touring than any other class, and again Milwaukee showed the larger wanderlust.

This table is believed to present the first figures of this character ever assembled and published. It indicates quite clearly that the residents of Wisconsin did not travel as extensively in 1930 as has been believed to be the custom. Only 7.5 percent, apparently, went on real tours into other States. The percentage visiting adjacent States, is, of course, high. It would probably be much higher in the average State, for Wisconsin has Lake Michigan on the east, the Mississippi and St. Croix Rivers largely bound it on the west, and Lake Superior also interferes with contacts with Canada.

The percentage of the travel for business and for pleasure was ascertained from the original traffic survey sheets. The purposes of travel were so divided on these sheets that it was possible to distinguish the travel as between pleasure and business travel.

It is believed that the tables presented, giving the results of the State-wide survey of highway traffic, offer an accurate indication of the travel of Wisconsin motor vehicles in 1930.

The method followed, involving the use of schedules or questionnaires, may be subject to unfavorable criticism, but it is believed that the results comprise a valuable contribution to the rapidly growing data on highway traffic developed by other studies in other States. Certainly, many relationships previously unknown or merely guessed at have been brought into the field of probable facts.

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5 cents.
- Report of the Chief of the Bureau of Public Roads, 1927.
5 cents.
- Report of the Chief of the Bureau of Public Roads, 1928.
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10 cents.

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- No. 347D . . Methods for the Determination of the Physical Properties of Road-Building Rock. 10 cents.
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SEPARATE REPRINT FROM THE YEARBOOK

No. 1036Y . . Road Work on Farm Outlets Needs Skill and Right Equipment.

TRANSPORTATION SURVEY REPORTS

- Report of a Survey of Transportation on the State Highway System of Ohio. (1927.)
- Report of a Survey of Transportation on the State Highways of Vermont. (1927.)
- Report of a Survey of Transportation on the State Highways of New Hampshire. (1927.)
- Report of a Plan of Highway Improvement in the Regional Area of Cleveland, Ohio. (1928.)
- Report of a Survey of Transportation on the State Highways of Pennsylvania. (1928.)
- Report of a Survey of Traffic on the Federal-Aid Highway Systems of Eleven Western States. (1930.)

A complete list of the publications of the Bureau of Public Roads, classified according to subject and including the more important articles in PUBLIC ROADS may be obtained upon request addressed to the U.S. Bureau of Public Roads, Willard Building, Washington, D.C.

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS

CURRENT STATUS OF FEDERAL-AID ROAD CONSTRUCTION

AS OF
FEBRUARY 28, 1933

STATE	COMPLETED MILEAGE	UNDER CONSTRUCTION				APPROVED FOR CONSTRUCTION				BALANCE OF FEDERAL-AID FUNDS AVAIL- ABLE FOR NEW PROJECTS	STATE		
		Estimated total cost	Federal aid allotted	Percentage completed	MILEAGE Initial Stage¹ Total	Estimated total cost	Federal aid allotted	MILEAGE Initial Stage¹ Total					
Alabama	2,347.8	\$ 4,859,898.25	\$ 2,409,949.02	32	155.1	80.0	235.1	\$ 866,276.17	\$ 433,138.06	11.9	28.1	40.0	Alabama
Arizona	1,231.9	2,793,510.18	1,417,693.53	64	122.8	151.7	274.5	18,688.34	3,728.46	3.2	3.2	3.2	Arizona
Arkansas	1,532.5	4,006,764.77	1,890,077.55	67	95.5	81.5	177.0	1,511,280.60	575,484.81	91.6	91.6	91.6	Arkansas
California	2,460.2	9,218,291.90	2,518,247.64	69	161.8	39.6	201.4	1,799,707.13	170,744.11	53.8	53.8	53.8	California
Colorado	1,782.4	3,034,039.61	1,362,561.48	57	115.8	34.0	149.8	776,944.26	349,624.45	52.3	52.3	52.3	Colorado
Connecticut	291.7	4,570,493.90	1,834,809.50	63	51.5	51.5	51.5	192,642.80	43,559.36	2.5	2.5	2.5	Connecticut
Delaware	769.7	575,582.15	121,212.72	21	18.6	21.9	40.5	264,571.10	53,012.72	10.4	10.4	10.4	Delaware
Florida	660.0	6,046,717.99	2,464,252.12	40	154.1	164.1	318.2	1,447,604.15	220,202.17	14.8	14.8	14.8	Florida
Georgia	3,152.5	6,069,204.42	2,404,736.18	39	172.7	198.5	371.2	206,401.14	93,060.53	3.7	11.0	14.7	Georgia
Idaho	1,531.0	2,705,135.03	1,032,983.28	67	121.9	130.6	252.5	233,569.15	83,413.50	18.0	18.0	18.0	Idaho
Illinois	3,068.8	8,182,457.74	3,213,212.18	79	690.4	38.2	688.6	1,178,984.89	487,319.49	44.1	5.3	122.4	Illinois
Indiana	2,068.7	7,331,746.19	3,300,110.69	89	270.5	270.5	270.5	2,483,461.38	299,994.38	117.1	1.1	122.2	Indiana
Iowa	3,515.5	5,713,463.68	1,005,789.38	87	26.1	40.0	326.1	29,981.92	11,160.00	1.2	1.2	1.2	Iowa
Kansas	3,826.8	4,493,120.00	1,654,371.55	70	233.6	113.9	407.5	1,395,444.95	226,029.42	81.1	23.8	104.9	Kansas
Kentucky	1,888.9	4,759,455.34	1,712,340.85	53	208.5	118.8	327.3	5,128.59	2,154.00	1.2	1.2	1.2	Kentucky
Louisiana	1,605.7	7,344,393.34	3,211,465.73	64	95.1	26.3	81.4	92,653.35	20,493.45	7.2	1.9	2.1	Louisiana
Maine	1,253.3	2,333,599.92	467,696.93	20	65.7	2.5	68.2	394,879.40	22,640.00	7.3	7.3	7.3	Maine
Maryland	827.3	1,538,799.92	467,696.93	30	65.7	2.5	68.2	394,879.40	22,640.00	7.3	7.3	7.3	Maryland
Massachusetts	870.5	4,305,603.09	1,086,714.88	59	59.8	4.9	64.7	158,265.29	30,000.00	3.4	3.4	3.4	Massachusetts
Michigan	2,293.8	7,391,967.13	2,982,884.95	65	311.5	103.0	414.5	1,158,975.91	396,990.00	69.4	1.4	70.8	Michigan
Minnesota	4,308.6	4,649,947.47	1,531,682.91	84	149.7	139.4	289.1	1,144,042.27	130.00	1.3	1.4	1.7	Minnesota
Mississippi	1,423.2	6,610,234.84	3,261,916.81	55	226.3	78.9	305.2	515,350.51	297,674.22	17.7	2.5	20.2	Mississippi
Missouri	3,187.5	3,084,022.98	632,312.18	70	189.2	11.0	140.2	2,092,184.31	371,194.71	103.7	11.8	115.5	Missouri
Montana	2,730.8	8,380,347.56	3,840,467.26	57	508.5	288.2	796.7	666,046.38	374,331.22	78.6	11.8	90.4	Montana
Nebraska	4,269.3	7,169,048.69	2,713,894.04	43	165.6	136.7	302.3	169,336.37	76,284.76	10.4	2.4	12.8	Nebraska
Nevada	1,253.3	1,769,048.69	519,507.41	29	28.7	105.9	134.6	142,336.52	24,336.52	29.6	13.0	42.6	Nevada
New Hampshire	4,269.3	7,169,048.69	2,713,894.04	43	165.6	136.7	302.3	169,336.37	76,284.76	10.4	2.4	12.8	New Hampshire
New Jersey	689.2	6,215,931.90	2,132,266.20	65	64.3	77.8	239.3	569,300.04	238,044.57	15.4	19.0	34.4	New Jersey
New Mexico	2,848.8	2,765,669.43	1,211,028.87	65	161.5	28.4	449.1	2,333,150.65	806,790.00	46.5	3.6	50.1	New Mexico
New York	3,497.0	11,995,794.44	5,490,400.55	59	466.7	28.4	495.1	914,782.67	460,851.44	131.8	5	132.3	New York
North Carolina	2,293.3	4,333,366.04	2,151,071.43	40	376.5	23.5	510.9	912,191.31	297,291.16	64.7	23.2	87.9	North Carolina
North Dakota	5,273.3	4,625,984.33	1,806,134.77	53	376.5	383.7	760.2	1,118,304.00	381,758.27	24.2	6.3	30.5	North Dakota
Ohio	2,999.9	8,893,588.09	2,471,433.49	57	203.5	69.8	273.3	1,118,304.00	381,758.27	24.2	6.3	30.5	Ohio
Oklahoma	2,438.3	3,889,265.46	1,675,425.31	74	158.3	65.2	223.5	2,436,370.92	902,689.38	165.2	18.3	183.5	Oklahoma
Oregon	1,592.5	3,974,580.18	1,639,480.09	60	115.6	94.6	210.2	461,134.53	170,712.28	44.2	4.4	48.6	Oregon
Pennsylvania	3,166.9	11,995,794.44	5,490,400.55	59	453.3	14.0	467.3	771,511.22	294,293.45	25.0	25.0	25.0	Pennsylvania
Rhode Island	271.6	1,071,153.47	351,357.27	29	22.5	4.5	27.0	771,396.09	10,747.67	33.7	3.4	3.4	Rhode Island
South Carolina	1,251.4	3,513,050.79	1,326,892.73	57	162.5	158.3	320.8	1,671,591.17	40,466.93	14.0	15.5	29.5	South Carolina
South Dakota	4,254.2	3,576,083.59	1,689,619.10	74	229.7	203.5	433.2	1,671,591.17	40,466.93	14.0	15.5	29.5	South Dakota
Tennessee	1,664.7	5,173,125.96	2,488,457.31	32	151.6	61.6	213.2	3,684,668.65	1,000,000.00	18.9	5.7	24.6	Tennessee
Texas	1,794.6	1,687,737.42	694,946.66	70	38.4	71.9	110.3	3,371,700.80	106,099.22	27.0	15.5	42.5	Texas
Utah	385.8	504,094.30	98,754.29	62	26.6	26.6	26.6	75,747.16	362,793.48	29.5	17.4	46.9	Utah
Vermont	1,531.2	2,494,233.87	2,045,209.12	54	216.6	53.1	269.7	75,747.16	362,793.48	29.5	17.4	46.9	Vermont
Virginia	1,531.2	2,494,233.87	2,045,209.12	54	216.6	53.1	269.7	75,747.16	362,793.48	29.5	17.4	46.9	Virginia
Washington	1,531.2	2,494,233.87	2,045,209.12	54	216.6	53.1	269.7	75,747.16	362,793.48	29.5	17.4	46.9	Washington
West Virginia	911.0	3,594,236.97	1,400,952.71	67	128.0	8.5	136.5	109,146.87	43,546.87	2.2	1.2	3.4	West Virginia
Wisconsin	2,744.2	6,110,925.98	1,186,406.56	71	199.3	102.0	261.3	92,061.90	26,500.00	1.0	1.0	1.0	Wisconsin
Wyoming	2,062.4	3,161,489.56	1,126,740.50	85	265.1	179.2	444.3	399,476.10	39,588.60	39.0	14.5	53.5	Wyoming
Hawaii	74.4	2,316,038.32	1,238,598.23	50	62.3	62.3	62.3	164,527.74	164,527.74	3.7	3.7	3.7	Hawaii
TOTALS	105,311.6	260,140,920.39	97,337,261.29	61	9,598.7	4,011.1	13,609.8	33,095,698.17	9,815,462.76	1,696.6	998.1	2,694.7	TOTALS
		144,060,000	59,407,000										
		116,125,000	37,940,000										

¹This item refers to construction refers to additional work done on projects previously approved with Federal aid. In general, such additional work consists of the construction of a surface of higher type than was provided in the original improvement.

Construction completed
Balance uncompleted

¹The term stage construction refers to additional work done on projects previously improved with Federal aid. In general, such additional work consists of the construction of a surface of higher type than was provided in the original improvement.